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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/554,627

Applicant(s)

MCCROSSAN ET AL.

Examiner

TIZE MA

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/100)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 10/26/2005, 03/27/2006, 11/28/2007

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 34 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claimed invention is a computer program. A computer program without a computer readable medium is not a physical "thing". Therefore a computer program per se, although it can be functional descriptive materials, is not statutory.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claimed invention is a computer program, which is not a patentable subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2628

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 25, 28-31, and 35 are rejected under 35 U.S.C. 102(a) as being anticipated by the article: ETSI EN 300 743 V1.2.1 (06-2002), "Digital Video Broadcasting (DVB); Subtitling systems" (already of record, hereinafter DVB).

7. Regarding claim 25, DVB discloses

a reproduction apparatus (decoder, see page 13) used for reproducing a digital stream constituted by multiplexing a video stream and a graphics stream (digital video with subtitles, page 9), said reproduction apparatus comprising:

a video decoder operable to decode the video stream so as to obtain a moving picture made of a plurality of pictures (no detail about video in DVB. However, the video component is essential as shown the related standard ETSI EN 300 468, listed in page 6);

a graphics decoder (page 13); and

a plane memory (buffer, page 16) used for combining graphics with the pictures, wherein

the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set of the Epoch Start type includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles),

the window information indicates a width, a height and a position of the window on a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, section 5.1.4), and

a Display Set following the leading Display Set is used for rendering graphics within the window (page 14, "normal case").

8. Regarding claim 28, DVB discloses the graphics data included in the leading Display Set of the Epoch Start type (page 14, first display set) is compressed graphics (page 11, lines 6), and

the graphics decoder includes: a processor operable to decode the compressed graphics (decoder, section 5); and a control unit operable to perform processing for clearing the window and processing for writing graphics within the window (new page, page refresh, table 3).

9. Regarding claim 29, DVB discloses that each Display Set includes control data stored in a packet, to which a decode time stamp and a presentation time stamp are attached, the decode time stamp represents a start time on a reproduction time axis of corresponding Display Set, the presentation time stamp represents a end time on the reproduction time axis of the corresponding Display Set and an execution start time for

displaying graphics based on the Display Set, and the control unit starts the processing for clearing the window at the start time represented by the decode time stamp, and finishes the processing for displaying graphics within the window before the end time represented by the presentation time stamp (see page 14, section 5.1.2 for PES packets and Presentation time stamps. Notice that PTS in DVB covers the two time stamps in the instant claim, as shown on page 12, lines 8-9).

10. Regarding claim 30, DVB discloses that the graphics stream includes two or more Display Sets of the Epoch Start type, and the control unit activates the window defined by the window information between, on the reproduction time axis, the leading Display Set that is of the Epoch Start type and another Epoch Start type Display Set that is immediately after the leading Display Set (page 39, keep last valid subtitle until replacing).

11. Regarding claim 31, DVB discloses that the reproduction apparatus includes an object buffer (coded data buffer, fig. 3) in addition to the plain memory,

the object buffer stores a graphics object obtained by decoding the graphics data included in the Display Set of the Epoch Start type, and

if the Display Set following the leading Display Set of the Epoch Start type is a normal case Display Set, the Display set following the leading Display Set includes the control data, but does not include the graphics data and the window information, and

the control unit included in the graphics decoder reads the graphics object from the object buffer, and using the read graphics object and based on the control data included in the normal case Display Set, performs the processing for writing graphics within the

Art Unit: 2628

window defined by the window information included in the Display Set of the Epoch Start type (page 14, section 5.1.1).

12. Regarding claim 35, DVB discloses

a reproduction method (decoding, see page 13), for reproducing a digital stream constituted by multiplexing a video stream and a graphics stream (digital video with subtitles, page 9), the reproduction method comprising:

video decoding of the video stream to obtain a moving picture made of a plurality of pictures (no detail about video in DVB. However, the video component is essential as shown the related standard ETSI EN 300 468, listed in page 6); and

graphics decoding (page 13), wherein

the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles),

Art Unit: 2628

the window information indicates a width, a height and a position of the window on a plane, the plane being a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, section 5.1.4), and

the reproduction method renders, within the window defined by the window information, graphics of the leading Display Set and a Display Set following the leading Display (presentation, 5.12, 5.1.3, 5.1.4).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 17, 20-22, 33-34, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article: ETSI EN 300 743 V1.2.1 (06-2002), "Digital Video

Broadcasting (DVB); Subtitling systems", and in view of Jung et al (US Pub. 20040081434 A1).

16. Regarding claim 17, DVB discloses the data comprising a digital stream constituted by multiplexing a video stream and a graphics stream, wherein

the video stream represents a moving picture made of a plurality of pictures (page 6, line 13, "coding of moving pictures"),

the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set of the Epoch Start type includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles), the window information indicates a width, a height and a position of the window on a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, 5.1.4), and

a Display Set following the leading Display Set is used for rendering graphics within the window (page 14, "normal case").

17. However, DVB does not disclose a recording medium used for storing data, the data comprising a digital stream constituted by multiplexing a video stream and a graphics stream.

18. Jung et al, in the same field of endeavor, teaches the recording medium which stores the data constituted by multiplexing a video stream and a graphics stream (paragraph [0031] for storing medium, and paragraph [0029] for multiplexing video stream and subtitle stream) since the recording medium, such as DVD, is a well known and convenient means for storing and carrying digital data.

19. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to store the data as shown in DVB by using the medium as shown Jung et al because the recording medium is a well known and convenient means for storing and carrying digital data.

20. Regarding claim 20, DVB discloses that each Display Set includes control data stored in a packet, to which a decode time stamp and a presentation time stamp are attached,

the decode time stamp represents a start time on a reproduction time axis of corresponding Display Set, and

the presentation time stamp represents an end time on the reproduction time axis of the corresponding Display Set and an execution start time for displaying graphics based on the Display Set (see page 14, section 5.1.2 for PES packets and Presentation time stamps. Notice that PTS in DVB covers the two time stamps in the instant claim, as shown on page 12, lines 8-9).

21. Regarding claim 21, DVB discloses that the graphics stream includes two or more Display Sets of the Epoch Start type, on the reproduction time axis, the window defined by the window information is active between the leading Display Set that is of the Epoch Start type and another Epoch Start type Display Set that is immediately after the leading Display Set (page 39, keep last valid subtitle until replacing).

22. Regarding claim 22, DVB discloses that
if the Display Set following the leading Display Set of the Epoch Start type is a normal case Display Set, the Display set following the leading Display Set includes the control data, but does not include the graphics data and the window information, and

the control data included in the normal case Display Set instructs the reproduction apparatus to render graphics within the window defined by the window information included in the Display Set of the Epoch Start type, using the graphics data included in the Display Set of the Epoch Start type (page 14, section 5.1.1).

23. Regarding claim 33, DVB discloses a digital stream constituted by multiplexing a video stream and a graphics stream,

the video stream represents a moving picture made of a plurality of pictures (page 6, line 13, "coding of moving pictures),

the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles),

the window information indicates a width, a height and a position of the window on a plane, the plane being a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, 5.1.4), and

a Display Set following the leading Display Set is used for rendering graphics within the window (page 14, "normal case").

24. However, DVB does not disclose a recording method for a recording medium, comprising: a step of generating application data; and a step of recording the generated data on the recording medium, wherein the application data includes a digital data stream.

25. Jung et al, in the same field of endeavor, teaches a recording method for a recording medium, comprising: a step of generating application data; and a step of recording the generated data on the recording medium, wherein the application data includes a digital data stream (see paragraph [0034] for recording method, paragraph [0031] for generating and recoding data). Recoding data on storage medium, such as DVD, is a well known and convenient means for storing and carrying digital data.

26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to record the data as shown in DVB to the medium as shown Jung et al because recording data on storage medium is a well known and convenient means for storing and carrying digital data.

27. Regarding claim 34, DVB discloses a decoder (see page 13) used for reproducing a digital stream constituted by multiplexing a video stream and a graphics stream by decoding video decoding of the video stream to obtain a moving picture made of a plurality of pictures and graphics decoding (digital video with subtitles, page 9), wherein

the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles), the window information indicates a width, a height and a position of the window on a plane, the plane being a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, 5.1.4), and

the decoder renders, within the window defined by the window information, graphics of the leading Display Set and a Display Set following the leading Display (section 5.1.2).

28. However, DVB does not disclose using computer program for reproducing the digital stream and rendering the graphics.

29. Jung et al teaches using computer program for reproducing the digital stream and rendering the graphics (paragraph [0174], CPU executes software program to process video data. Also see reproduction in paragraph [0172]). The computers are commonly equipped with video disc drives, such as DVD-ROM, and often share the recording medium with the disc players. The digital stream may also be downloaded and displayed by computers.

30. Therefore, , it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the decoder as shown in DVB as software program as shown Jung et al so that computers can be used to reproducing the digital stream.

31. Regarding claim 36, DVB discloses a device (decoder, page 13) for processing a digital stream constituted by multiplexing a video stream and a graphics stream, the device comprising:

a video decoder operable to decode the video stream so as to obtain a moving picture made of a plurality of pictures (no detail about video in DVB. However, the video component is essential as shown the related standard ETSI EN 300 468, listed in page 6);

a graphics decoder (page 13); and

a plane memory (buffer, page 16) used for combining graphics with the pictures, wherein the graphics stream includes a plurality of Display Sets each being a group of data that constitutes graphics for one screen (page 11, line 22, subtitle stream includes subtitling segments, carried in PES packets; Page 14, line 41, PES packet contains display sets),

a leading Display Set among the plurality of Display Sets is of an Epoch Start type (page 14, first display set of the epoch, "mode change"),

the leading Display Set includes graphics data and window information that specifies a window for rendering the graphics therein (page 14, display set with "mode change" includes PCS and RCS),

the graphics data represents graphics to be combined with the pictures (page 9, subtitles), the window information indicates a width, a height and a position of the window on a plane, the plane being a plane memory of a reproduction apparatus that combines graphics with the pictures (page 15, 5.1.4), and

a Display Set following the leading Display Set is used for rendering graphics within the window (page 14, "normal case").

32. However, DVB does not disclose using integrated circuit.

33. Jung et al teaches using integrated circuit for reproducing digital video data (see, decoder in Fig. 9. The examiner interprets integrated circuit as hardware component which comprises processing chips. The decoder in Fig. 9 is such a component) as hardware implementation of the device for solving the same problem as in the instant claim.

34. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the decoder as shown in DVB as hardware/integrated circuit as in Jung et al for solving the problem of reproducing the digital video stream.

35. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over DVB and Jung et al as applied to claim 17 above, and further in view of Orr (US Pub. 20030035063 A1).

36. Regarding claims 18 and 19, the combination of DVB and Jung et al remains as applied to claim 17 above. However, the combination does not teach that the width and the height of the window are determined based on a ratio between a rate of an update of the window performed by the plurality of Display Sets and a frame rate of the pictures. It does not teach that the width and the height of the window are set so that a size of the window is $1/x$ of the plane corresponding to a size of each picture, where x is a real number indicating the ratio between the rate of the update of the window performed by the plurality of Display Sets and the frame rate of the pictures.

37. Orr, in the same field of endeavor and for solving the same problem, discloses that the width (number of characters per line) and height (number of lines) of the subtitles are determined by the transmission rate of texts and the rate of video display (paragraph [0026]) for the purpose of synchronization of the subtitle texts and video display. As for the size of the window (region of the subtitles) to be expressed as $1/x$ of the plane (the display screen), any number can be expressed in such a form.

38. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium in the combination of DVB and Jung et al by

determining the size of the window of the graphics based on the update rate of the graphics and display rate of the video for synchronization of the subtitle texts and video display.

39. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over DVB as applied to claim 25 above, and in view of Orr (US Pub. 20030035063 A1).

40. Regarding claims 26 and 27, DVB remains as applied to claim 25 above. However, DVB does not teach that the width and the height of the window are determined based on a ratio between a rate of an update of the window performed by the graphics decoder and a frame rate of the pictures determined by the video decoder. It does not teach that the width and the height of the window are set so that a size of the window is $1/x$ of the plane corresponding to a size of each picture, where x is a real number indicating the ratio between the rate of the update of the window and the frame rate of the pictures.

41. Orr, in the same field of endeavor and for solving the same problem, discloses that the width (number of characters per line) and height (number of lines) of the subtitles are determined by the transmission rate of texts and the rate of video display (paragraph [0026]) for the purpose of synchronization of the subtitle texts and video display. As for the size of the window (region of the subtitles) to be expressed as $1/x$ of the plane (the display screen), any number can be expressed in such a form.

42. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device in DVB by determining the size of the window

of the graphics based on the update rate of the graphics and display rate of the video for synchronization of the subtitle texts and video display.

43. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over DVB and Jung et al as applied to claims 17 and 22 above, and further in view of Hamasaki et al (US Pub. 20060204092 A1).

44. Regarding claim 23, the combination of DVB and Jung et al remains as applied to claims 17 and 22 above. DVB also discloses that the reproduction apparatus includes an object buffer (coded data buffer, fig. 3) in addition to the plain memory, the object buffer stores a graphics object obtained by decoding the graphics data included in the Display Set of the Epoch Start type (page 14, section 5.1.1). However, DVB does not disclose that the control data included in the normal case Display Set includes crop information indicating a part of the graphics object stored in the object buffer where is to be cut out and transferred to the plain memory.

45. Hamasaki et al, in the same field of endeavor, teaches the crop information in the Display Set (paragraph [0076]) for the purpose of controlling if the graphics object is displayed.

46. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium as in the combination of DVB and Jung et al by including the crop information in the Display Set as shown in Hamasaki et al for the purpose of controlling if the graphics object is displayed.

47. Regarding claim 24, the combination of DVB and Jung et al remains as applied to claims 17, 22, and 23 above. However, the combination does not teach that the

control data included in the normal case Display Set includes position information indicating a position within the window where the part cut out from the graphics is to be displayed, and the part indicated by the crop information exists at the position indicated by the position information.

48. Hamasaki et al, in the same field of endeavor, teaches that the control data included in the normal case Display Set includes position information indicating a position within the window where the part cut out from the graphics is to be displayed, and the part indicated by the crop information exists at the position indicated by the position information (paragraph [0076] and Fig. 8B) for the purpose of controlling if the graphics object is displayed

49. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium as in the combination of DVB and Jung et al by including the position information in the crop information in the Display Set as shown in Hamasaki et al for the purpose of controlling if the graphics object is displayed.

50. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over DVB as applied to claims 25, 28, 31 above, and in view of Hamasaki et al (US Pub. 20060204092 A1).

51. Regarding claim 32, DVB remains as applied to claims 25, 28, and 31 above. However, DVB does not teach that the control data included in the normal case Display Set includes crop information, and the control unit cuts out a part of the graphics object stored in the object buffer as indicated by the crop information.

52. Hamasaki et al, in the same field of endeavor, teaches the crop information in the Display Set (paragraph [0076]) for the purpose of controlling if the graphics object is displayed.

53. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus as in DVB by including the crop information in the Display Set as shown in Hamasaki et al for the purpose of controlling if the graphics object is displayed.

54. Regarding claims 23-24, 32, since the claimed features are not supported by the provisional application (60/465,972) filed on 04/28/2003, therefore the effective filing date for these claims is the PCT filing date of the application. Consequently, Hamasaki et al, which has a PCT filing date of 04/22/2003, is used as a 102(e) type of reference for the above rejections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIZE MA whose telephone number is (571)270-3709. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao M. Wu can be reached on 571-272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tm

/XIAO M. WU/
Supervisory Patent Examiner, Art Unit 2628